Operating instructions for emergency stop switch ES-XW/XN

EUCHNER

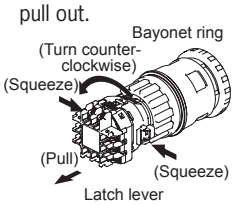
⚠ SAFETY NOTE

- Read this instruction sheet and the catalog for the ES-XN/XW series emergency stop switches to make sure of correct operation before starting installation, wiring, operation, maintenance, and inspection. Make sure that the instruction sheet is kept by the end user.
- Turn off the power to the ES-XN/XW before starting installation, wiring, maintenance and inspection of the ES-XN/XW. Failure to turn power off may cause electric shock or fire hazard.
- Use wires of a proper size to meet voltage and current requirements. Tighten the M3 terminal screws to a tightening torque of 0.6 to 0.8 Nm. Improper wires and loose terminals during operation will cause overheating and fire hazard. Provide a proper protection against electric shocks.

Removing/Installing Contact Block and Panel Mounting

- Removing

First unlock the operator button. Squeeze the latch lever on the yellow bayonet ring and pull back the bayonet ring with force until the latch pin clicks, then turn the contact block counter-clockwise and pull out.

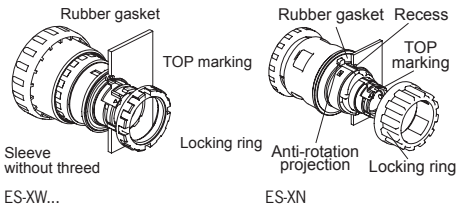


Notes for removing the contact block

1) With the button in the locked position, do not remove the contact block, otherwise the switch may be damaged.
2) When the contact block is removed, the monitor contact (NO contact) is closed.
3) While removing the contact block, do not exert an excessive force, otherwise the switch may be damaged.
4) An LED lamp is built into the contact block for illuminated pushbuttons. When removing the contact block, pull out the contact block straight to prevent damage to the LED lamp. If an excessive force is exerted, the LED lamp may be damaged and fail to light.

- Panel Mounting

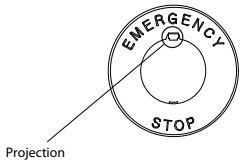
Remove the locking ring from the operator and check that the rubber gasket is in place. Align the anti-rotation projection on the bezel with the recess in the panel, insert the operator from panel front into the panel hole and tighten the locking ring using ring wrench ES-XN9Z-T1 to a torque of 2.5Nm. Face the side without thread on the operator with TOPmarking upward, and tighten the locking ring using ring wrench ES-MW9Z-T1 to a torque of 2.0Nm.



- About anti-rotation

To prevent the ES-XW emergency stop switch from rotating when resetting from the latched position with excessive force, use of a nameplate (ES-HWAV-27) is recommended. Align the side without thread on the operator with TOP marking, the small ▲ marking on the projection on the nameplate, and the recess on the mounting panel.

When using the ES-XN emergency stop nameplate (ES-HNAV-27).



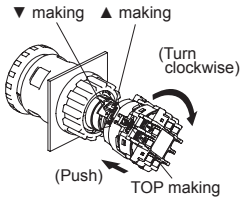
Before installing the emergency stop nameplate, break the projection on the nameplate using pliers.

- Installing

First unlock the operator button. Align the small ▼ marking on the edge of the operator sleeve with the small ▲ marking on the yellow bayonet ring. Hold the contact block, not the bayonet ring. Press the contact block onto the operator and turn the contact block clockwise until the bayonet ring clicks.

Notes for installing the contact block

1) With the button in the locked position, do not install the contact block, otherwise the switch may be damaged.
2) Make sure that the bayonet ring is secured in the locked position.



Notes for Operation

When using the emergency stop switch for safety-related equipment in a control system, refer to the safety satandards and regulations in each country and region depending on the application purpose of the actual machines and installations to make sure of correct operation. Before using the emergency stop switch, perform risk assessment to make sure of safety.

- Wiring

Tighten the terminal screws to a torque of 0.6 to 0.8 Nm.

- Contact Bouncing

When the button is reset by pulling or turning, the NC main contacts cause bouncing. When pressing the button, the NO monitor contacts cause bouncing. When designing a control circuit, take the bouncing into consideration (reference value: 20 ms).

- LED Illuminated Switches

The LED lamp is built into the contact block and cannot be replaced.

- Handling

Do not expose the switch to excessive shocks and vibrations, otherwise the switch may be deformed or damaged, causing malfunction or operation failure.

- Padlock Emergency Stop (ES-XN)

The padlockable emergency stop switches can be reset by turning only, and cannot be pulled to reset. Do not attempt to pull to reset, otherwise damage or malfunction may result.

Contact Ratings [Main Contact (NC) and Monitor Contact (NO)]

Rated Insulation Voltage (Ui)				250V		
Conventional Free Air Thermal Current (Ith)				5A		
Rated Operational Voltage (Ue)				30V	125V	250V
Rated Operational Current	Main Contact	AC 50/60Hz	Resistive Load (AC-12)	-	5A	3A
			Inductive Load (AC-15)	-	3A	1.5A
		DC	Resistive Load (DC-12)	2A	0.4A	0.2A
			Inductive Load (DC-13)	1A	0.22A	0.1A
	Monitor Contact	AC 50/60Hz	Resistive Load (AC-12)	-	1.2A	0.6A
			Inductive Load (AC-14)	-	0.6A	0.3A
		DC	Resistive Load (DC-12)	2A	0.4A	0.2A
			Inductive Load (DC-13)	1A	0.22A	0.1A

Built-in LED Ratings

Rated Voltage	Operating Voltage	Operating Current
24V AC/DC	24V AC/DC±10%	15 mA

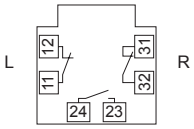
Specifications

Applicable Standard	IEC 60947-5-1, EN 60947-5-1 IEC 60947-5-5, EN 60947-5-5 JIS C8201-5-1, JIS C8201-5-5, UL508, UL991, NFPA79, CSA C22.2 No.14, GB14048-5
Standard Operating Conditions	Operating temperature Non illuminated : -25 to +60 °C (no freezing) LED illuminated : -25 to +55 °C (no freezing) Relative humidity : 45 to 85 % RH (no condensation) Storage temperature : -45 to +80 °C (no freezing)
Minimum Direct Opening Force	80 N
Minimum Direct Opening Travel	4.0 mm
Maximum Travel	4.5 mm
Contact Resistance	50 mΩ maximum (initial value)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Over voltage Category	II
Impulse Withstand Voltage	2.5 kV
Pollution Degree	3
Operating Frequency	900 operations/hour
Mechanical Life	250,000 operations min
Electrical Life	100,000 operations min 250,000 operations min (24V AC/DC, 100mA)
Shock Resistance	Operating extremes : 150 m/s² Damage limits : 1,000 m/s²
Vibration Resistance	Operating extremes :10 to 500 Hz, amplitude 0.35mm, acceleration 50 m/s² Damage limits:10 to 500 Hz, amplitude 0.35mm, acceleration 50 m/s²
Degree of Protection	IP65 (panel front)
Terminal Protection	IP20
Short-circuit Protective Device	250V/10A fuse (Type aM IEC60269-1/ IEC60269-2)
Conditional Short-circuit Current	1,000 A
Applicable Tightening Torque	0.6 to 0.8 Nm
Applicable Wire	0.75 to 1.25 mm² (AWG18 to 16)
ES-XW	
Recommended Tightening Torque of Locking Ring	2.0 Nm
ES-XN	
Recommended Tightening Torque of Locking Ring	2.5 Nm
Total Weight of Padlock and Hasp	1500g maximum
Reinforced Insulation (IEC 60664-1)	Between live parts and Bezel

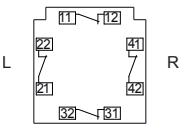
Contact Arrangements (Bottom View)

Non-illuminated

ES-XW1E-BV412MFR/
ES-XN4E-BL412MFRH

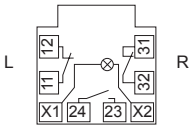


ES-XW1E-BV404MFR

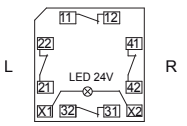


Illuminated

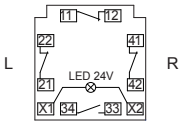
ES-XW1E-LV412Q4MFR/
ES-XN4E-LL412Q4MFR



ES-XW1E-LV404Q4MFR

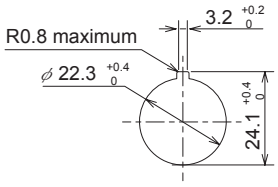


ES-XW1E-LV413Q4MFR

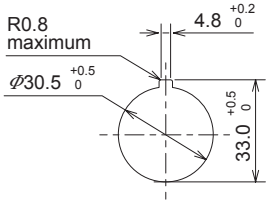


Mounting Hole Dimensions

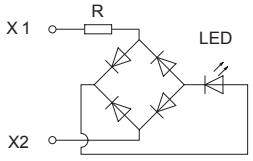
ES-XW



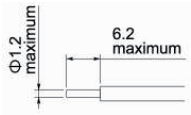
ES-XN



LED Unit Internal Circuit



Applicable Wire



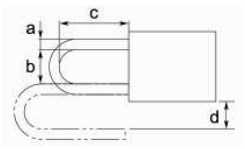
Padlock and Hasp

Applicable padlock and hasp are shown below.

Padlock size

a	b	c	d
7 mm maximum	19 mm minimum	39 mm minimum	15 mm minimum*)

*) Dimension d is 6 mm or more when attaching a padlock from the side of a switch.



Since various from and sizes are available, make sure of applicability using the actual padlock and hasp before use.

The total weight of the padlock and hasp can be a maximum of 1500g. When the total weight exceeds this limit, the switch may malfunction or fail.